



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,790	06/27/2003	Alan Michael Jaffee	7302	6842

7590  
JOHNS MANVILLE  
Legal Department  
10100 West Ute Avenue  
Littleton, CO 80127

03/19/2007

EXAMINER

STEELE, JENNIFER A

ART UNIT	PAPER NUMBER
----------	--------------

1771

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/19/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/608,790

Applicant(s)

JAFEE, ALAN MICHAEL

Examiner

Jennifer Steele

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5, 7, 9, 11-23, 25-29 and 31-33 is/are pending in the application.
- 4a) Of the above claim(s) 30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 7, 9, 11-23, 25-29 and 31-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. Claim 1-3, 5, 7, 9, 11-23, 25-29, 31-33 rejected under 35 U.S.C. 103(a) as being unpatentable over Lehnert (US 4,647,496) in view of Gill (US 4,637,951). Lehnert teaches a fibrous mat-faced gypsum board comprised of a gypsum core that is sandwiched between two sheets of glass mat (ABST). Lehnert teaches a gypsum core that has one or more additives, which improve the water resistance. Lehnert teaches Portland cement and poly(vinyl acetate), poly(vinyl chloride) and acrylic resins for use in the gypsum core that are effective additives to improve water resistance (col.10, lines 6-25). Portland cement is a hydraulic set material and meets the limitations of claim 33. Lehnert further teaches hydraulic set materials and teaches panels with cement based cores of hydraulic cement or Portland cements (col. 2, lines 38-57). Lehnert teaches

Art Unit: 1771

glass fibrous mats of good porosity made from chopped fiber in a resinous binder (col. 9, lines 5-38). Lehnert teaches a resinous binder of "modified urea –formaldehyde" (col. 14, lines 35-37). Lehnert differs from the current application and does not teach the fiber sizes and compositions of the glass fibrous mats. Lehnert differs from the current application and does not teach an air permeability of greater than 250 ft<sup>3</sup>/min at 0.5 inches of water.

Gill teaches a fibrous mat facer with improved resistance to wetting or strike-through (ABST). Gill teaches a fibrous mat that is a blend of glass fibers with a majority of base fibers and a minority of micro fibers that are bonded together with a resinous binder (ABST). The majority of base fibers are chopped glass fibers and have an average micron size of 10 microns which is in the claimed range of 11 +/- 1.5 micron (ABST, col. 3, lines 12-21). Gill teaches a second type of fiber referred to as glass micro fiber that have an average diameter of one micron which is in the range of the claimed range of less than 5.5 micron. Gill teaches glass micro fibers that are staple fibers (col. 3, lines 45-46). The glass micro fibers comprise between 5% and 20% of the total weight of the blend (col. 2, lines 14-16). As to claim 5 and 7 the chopped glass fibers have an average fiber length ranging from about ¼ to 1 inch, which is 6.4 to 25.4 mm and is in the range of 5 to 30 mm and 6 to 12 mm of the claimed invention. As to claim 12 – 14, the average micro fiber diameter is less than 1 micron and the average length range between 1/8 and ¼ inch which is 3.2 to 6.4 mm and in the range of the claimed fine staple fibers (col. 3, lines 57-58). As to claims 18, 19 and 25. Gill teaches a binder that includes a primary ingredient usually of urea formaldehyde resin or a blend of UF resin

Art Unit: 1771

with other water based emulsions such as acetate or acrylics (col. 4, lines 10-15). Gill teaches a secondary binder ingredient such as a fluorochemical compound such as Scotchban or compound from a family of wet proofing resins would be that family of water based silicone elastomer emulsions. As to claim 32, Gill teaches a mat having a permeability of at least  $220 \text{ ft}^3/\text{sec}$  ( $13,200 \text{ ft}^3/\text{min}$ ) at 5 inches of water. Gill does not specify the air permeability at 0.5 inches of water.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the fibrous mats of Gill in the structure of Lehnert motivated to produce an improved gypsum board.

2. Claim 2, 3, 9, 11 and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Lehnert (US 4,647,496) in view of Gill (US 4,637,951) in further view of Graves (US 5,389,716). Lehnert teaches a fibrous mat-faced gypsum board comprised of a gypsum core that is sandwiched between two sheets of glass mat (ABST). Lehnert differs from the current application and does not teach the type and composition of the glass fibrous mats. Lehnert does not teach chopped glass fibers selected from the group consisting of E glass, C glass, T glass, sodium borosilicate glass and mixtures thereof. Lehnert does not teach fines staple fibers are composed of C glass. Gill teaches glass fibers of a blend of base fibers and fine staple fibers. Graves teaches a fire resistant bonder for fibrous mats where the mats are comprised of glass fibers or mineral fibers (col. 2, lines 34-36). Graves teaches glass fibers strands that are composed of glass fibers. Graves teaches fibers of various sizes and specifically refers

Art Unit: 1771

to Gill (US 4,129,674) (col. 11, lines 11-20). Graves teaches a binder for use in fibrous mats compatible with glass fibers, mineral wool fibers, metal fibers, metal coated glass or graphite fibers. Graves teaches the glass fibers are obtained from conventional "E" glass and derivative thereof including "A" glass, "C" glass, "S" glass and "T" glass (col. 10, lines 4-11). Graves teaches glass fiber improve the structural foundation of the finished mat by increasing its tear resistance and tensile strength and improve the folding and working quality of the mat. Graves teaches that glass fibers are also relatively fire resistant but teaches mineral wool is more fire resistant (col. 10, lines 44-50). Graves teaches fiber sizes and teaches the fiber sizes and blend referring to Gill (col. 11, lines 11-33)

It would have been obvious to one of ordinary skill in the art to specify the different types of fibers in the fibrous mats of Lehnert, motivated by the properties of the types of glass fibers as taught by Graves.

3. Claim 18-22 rejected under 35 U.S.C. 103(a) as being unpatentable over Lehnert (US 4,647,496) in view of Graves (US 5,389,716) and in further view of Kajander et al. (US 6,723,670). Lehnert teaches a fibrous mat-faced gypsum board comprised of a gypsum core that is sandwiched between two sheets of glass mat (ABST). Lehnert differs from the current application and does not teach a resinous binder comprising a melamine formaldehyde cross-linker.

Graves teaches a fire resistant bonder for fibrous mats where the mats are comprised of glass fibers or mineral fibers (col. 2, lines 34-36). Graves teaches a binder composition comprising a stable mixture of a fire resistant latex preferably a halogenated latex

Art Unit: 1771

polymer more preferably also carboxylated; an aqueous aldehyde condensation polymer-based thermosetting resin, preferably an urea-aldehyde thermosetting resin (col. 2, lines 35-40). A thermosetting resin is a crosslinking resin.

Kajander teaches foam coated nonwoven fibrous mat particularly suited for a facer on gypsum wallboards (ABST). Kajander teaches a mat primarily of glass fibers with a minor portion of resinous binder (ABST). Kajander teaches conventional resinous binders of modified urea formaldehyde as well as a melamine formaldehyde, a latex containing mixture of cross linked vinyl chloride acrylate copolymer having a glass transition temperature as high as about 113°F (45°C) and preferably about 97°F (36°C) and a small amount of stearylated melamine.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a thermosetting, crosslinking binder in the fibrous glass mat of Lehnert motivated to improve the properties of the bond mat and gypsum board. It further would have been obvious to employ a binder with a relatively high glass transition temperature of Kajander motivated to improve the heat resistance of the gypsum board. It would have been obvious to employ a crosslinking agent of the amount of 2 to 5 to 10% motivated to optimize the glass transition temperature of the binder.

4. Claim 16 and 25-28 rejected under 35 U.S.C. 103(a) as being unpatentable over Lehnert (US 4,647,496) in view of Carbo (US 2004/0209071). Lehnert teaches a fibrous mat-faced gypsum board comprised of a gypsum core that is sandwiched between two sheets of glass mat (ABST). Lehnert teaches gypsum sheathing and

Art Unit: 1771

gypsum core of wallboard and building materials where the gypsum has many desirable characteristics such as fire-resistant properties and water resistance. Lehnert teaches conventional gypsum wallboard that is covered with paper sheets and Lehnert teaches the disadvantages of water seepage through paper. Lehnert teaches away from paper and differs from the current application and fails to teach Kraft paper. Lehnert differs from the current application and does not teach reinforcing fiber and does not teach a biocide in the gypsum core.

Carbo teaches a mold resistant acoustical panel, ceiling tile and wall materials. Carbo teaches gypsum is a preferred material in the panel because it provides surface hardness and fire resistance [0021]. Carbo teaches fillers including reinforcing fibers that are cellulosic and fibers of mineral wool [0023]. Carbo teaches an antimicrobial agent or biocide such as zinc pyrithione that can be added to the gypsum panel core [0027] and [0029].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ reinforcing fibers and a biocide in the gypsum core of the building material of Lehnert motivated to produce a building material that is resistant to mold and stronger. It further would have been obvious to employ a gypsum core that is fire resistant as taught by Carbo. When the reference discloses all the limitations of a claim except a property or function, and the examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention the examiner has basis for shifting the burden of proof to applicant as



in *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980). See MPEP §§ 2112-2112.02.

5. The Declaration under 37 CFR 1.132 filed 12/26/2006 is insufficient to overcome the rejection of claim 1-3, 5, 7, 9, 11-23, 25-29, 31-33 based upon 35 USC § 103(a) as set forth in the last Office action because: The evidence is not commensurate in scope with the claims in that independent claim 1 is not limited to a particular fiber length and claim 1 covers a range of amounts of 1-30 and the unexpected results are not shown over the entire claimed range.

#### ***Response to Arguments***

6. Applicant's arguments filed 12/26/2006 have been fully considered but they are not persuasive. Applicant's arguments with respect to claim 1-3, 5, 7, 9, 11-23, 25-29, 31-33 have been considered but are moot in view of the new ground(s) of rejection.

7. Applicant argues that prior does not cite 1-30% composition of fine staple fibers. Current rejection is citing current application as obvious over Lehnert in view of Gill which cites an overlapping range with current claims.

8. Applicant's arguments with respect to Graves differing strikingly from the subject matter have been considered but are moot in view of the new ground(s) of rejection.

9. Applicant's arguments with respect to Graves as not born out as a reliable prediction of smoothness have been considered but are not persuasive. In response to applicant's argument that the references fail to show certain features of applicant's

Art Unit: 1771

invention, it is noted that the features upon which applicant relies (i.e., smoothness) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

10. Applicant's arguments filed with respect to Examiner's statement that the limitation of "hydraulic set" has been fully considered but they are not persuasive as he basis on new ground of rejection. Applicant has defined "hydraulic set" as material capable of hardening to form a cementitious compound in the presence of water and includes gypsum, Portland cement, pozzolanic materials and the like. (specification pg. 7). The current rejection detailed above includes materials that meet the applicants definition of hydraulic set and include gypsum and Portland cement. Lehnert teaches use of hydraulic set materials (cement) as an additive to improve water resistance and refers to prior art US 3,284,980. Lehnert teaches the advantages of gypsum over cement and states that cement based panels are heavy and require more energy for installation (col. 2, lines 38-58).

11. Applicant's arguments filed with respect to Gill's reference to air permeability have been fully considered but they are not persuasive. Gill teaches a Frazier Air Permeability of 220 cubic feet per second and not cubic feet per minute in example 3, col. 6, lines 1-10. Gill teaches 220 ft<sup>3</sup>/sec which is equivalent to 13,200 ft<sup>3</sup>/min and well about the range of the current application which is claiming over 250 ft<sup>3</sup>/min. Gill does not specify the air permeability at 0.5 inches of water. Gill teaches an air permeability measurement at 5 inch reading using a Miriam red oil manometer fluid with a specific

Art Unit: 1771

gravity of 0.827 (co. 5, lines 10-20). When the reference discloses all the limitations of a claim except a property or function, and the examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention the examiner has basis for shifting the burden of proof to applicant as in *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980). See MPEP §§ 2112-2112.02

12. Applicant's arguments filed with respect to Horner's reference to kraft paper have been fully considered but moot in grounds of new rejection set forth in this office action.

13. Applicant's arguments filed with respect to claim 26 and Graves in view of Carbo have been fully considered but moot in grounds of new rejection set forth in this office action.

14. Applicant's arguments filed with respect to claim 25 and 27 and Graves in view of Lehnert have been fully considered but moot in grounds of new rejection set forth in this office action.

15. Applicant's arguments filed with respect to claim 1-3, 5, 7, 9, 11-23, 25-29, 31-33 and Kajander in view of Gill in further view of Lehnert, Horner and Carbo have been fully considered but moot in grounds of new rejection set forth in this office action.

16. Applicant's arguments filed with respect to claim 1-3, 5, 7, 9, 11-23, 25-29, 31-33 and Jaffee in view of Gill have been fully considered but moot in grounds of new rejection set forth in this office action.


### ***Conclusion***

Art Unit: 1771

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Steele whose telephone number is (571) 272-7115. The examiner can normally be reached on Office Hours Mon-Fri 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
ELIZABETH M. COLE  
PRIMARY EXAMINER

3/12/2007